David Mawdsley

Bristol, UK
david@mawds.co.uk

Profile

A practical and applied developer and data scientist, educated to PhD level, with excellent people skills and management experience. Experienced at developing appropriate solutions from concept to production to load, analyse and visualise large and complex data sources.

Key Expertise and skills

- Deployment of data science products to production
- Competent and experienced R and Python programmer
- Development best practice and reproducibility; Git, Docker, Targets (R workflow management package), testing and CI
- Experience of leading and developing a team

Employment History

Self employed (Tupledata Limited) August 2023 to present
Self employed contract work. Currently working for a UK university developing a tool to assess biases in medical trials. Tools used: Python, Django, PostgreSQL, Traefik, Docker compose, git.

Travelling; career break – June to August 2023.
Career break to go travelling. My main trip was a cycle tour from the Netherlands to Hungary, blogged at https://travel.mawds.co.uk

Senior Research Software Engineer (University of Manchester – IT Services) – June 2021 to June 2023
Responsible for the technical delivery of the University's AI Foundry project. I led a team of 4 Research Software Engineers to work with small and medium sized businesses advising and developing AI, machine learning and analytics solutions across a range of domains including healthcare, marketing and industry. Tools used included R, Python, Plumber (for API development) and Shiny. Developed a Shiny app hosting service for the University, allowing "one click" deployment to Posit's open source Shiny server.

Technical Director (Vuzo) April 2019 – June 2021
Responsible for Vuzo's data science products and projects. Key projects include development of a Shiny app providing data visualisation, insight and analysis for clients' web-store data via the store APIs, development of propensity to churn models and presenting the results of our analyses to clients.

Interim Infrastructure Director (DataHE, Bristol) February 2019 – March 2019
Development of DataHE's software and hardware infrastructure to improve the resilience and scalability of the organisation's data products.

Research Software Engineer (University of Manchester – IT Services) – November 2016 to January 2019
Internal consultancy and development of software and statistical models for researchers' projects, across a diverse range of fields. Development and delivery of software training courses in R to over 200 participants. Main technologies used: R, Shiny, Python, Docker, Azure, git, Makefiles. Recent projects include system integration and Shiny data visualisations for the Digital Experimental Cancer Medicine project (joint project between the University, AstraZeneca and Cancer Research UK) and development of predictive models for building energy use.

Senior Research Associate (University of Bristol – School of Social and Community Medicine) - January 2015 to November 2016
Development of Bayesian models using R, Stan and WinBUGS to synthesise clinical trial results including dose and time information. Presenting results orally and in poster form at international conferences. Using git and knitr within Rstudio for efficient and reproducible research.

Research Assistant – NIHR Fellowship (University of Bristol – School of Social and Community Medicine) - September 2013 to January 2015
I started the fellowship by doing an MSc in medical statistics. Recipient of Diane Jackson prize for best dissertation. Following my MSc I worked on Markov Chain Monte-Carlo models to understand the characteristics of clinical trials which increase the risk of biased results.

Senior Analyst (Higher Education Funding Council for England) - July 2011 to September 2013.
I was responsible for managing elements of HEFCE's data supply, management and processing capabilities. Responsible for the development and maintenance of HEFCE's Key Information Set data collection system. This used SAS to process XML data submitted by universities, link it to internally and externally held data, and validate the results. Developed SAS macros to transparently map SQL databases onto SAS libraries, offering a five fold performance increase on some analyses.

Analyst – REF (Higher Education Funding Council for England) - July 2007 to July 2011.
Responsible for the technical development of the Council's pilot study and research into the feasibility of bibliometrics (citation analysis) for the REF. Presented the results of my analyses to director and vice-chancellor level figures.

Analyst (Higher Education Funding Council for England) - December 2006 to July 2007.
Development of HEFCE's funding reconciliation algorithms and processes using SAS. This role also involved producing publications and technical guidance, and liaison with both further and higher education institutions.

Education

MSc Medical Statistics (University of Leicester) - October 2013 to September 2014
(Distinction) Topics studied included: clinical trials, epidemiology, survival analysis, multilevel modelling, generalised linear models, MCMC and Bayesian inference. Options chosen: Advanced Evidence Synthesis and Decision Modelling. Dissertation: “Alternative models for between-study heterogeneity in meta-analysis”.

Diploma in Statistics (Open University) - January 2011 to June 2013 (part time)
Modules studied: Analysing Data (distinction), Applications of Probability (distinction), Practical Modern Statistics (distinction), Linear Statistical Modelling (distinction). This course covered many of the key areas of statistics, including linear regression, medical statistics and Bayesian statistics.

PhD, Department of Physics (University of Bath) - October 2003 to January 2007
“*Community Structure in Animal Social Networks*” I studied complex networks and applied recent advances in the field to biological systems. This has involved writing new algorithms in C and Perl to allow us to understand the mesoscopic structure of networks. During my PhD I presented a poster at a conference in France, and gave an invited talk at Bielefeld University in Germany.

First class honours MPhys Physics with Computational Physics (University of Sussex) - October 1999 to June 2003
Course included core physics and computational physics modules. These included including Unix, Fortran, Matlab and C. In my third year, I spent six months at Uppsala University, Sweden, where I studied geophysics courses.

A levels: Physics (A), Maths (A), Further Maths (B), Chemistry (C)
GCSE: 9, all grade B and above including English and Maths
Goethe-Institut A2 German (2018)